

REMARKS

Upon entry of the present amendment, claims 1, 3, 7, 9, 11, 13, 15 and 17-20 will remain pending in the above-identified application and stand ready for further action on the merits.

In the present amendment, claims 1 and 3 have been amended, claim 5 has been cancelled and claims 17-20 have been added. The amendments do not incorporate new matter into the application as originally filed. For example, support for the amendment to claim 1 occurs in the original filed application at page 2, lines 18-22, page 5, lines 9-14 and lines 22-25.

Regarding the amendment to claim 3, the same finds support at page 6, line 21.

The newly added claims also find support in the original filed application. For example, support for claim 18 occurs at page 6, line 17, and support for claim 20 occurs at page 15, line 11.

Enclosed 37 CFR § 1.132 Declaration

Enclosed with the present response is a 37 CFR § 1.132 declaration of Mr. Nobuo Oi, one of the present co-inventors. The Examiner is respectfully requested to review Mr. Oi's declaration at this time, since the same is believed to be material to a consideration of the patentability of the present invention. In this regard, the Examiner's attention is directed to page 6 of the declaration wherein Mr. Oi explains as follows:

“(1) It is apparent from Experiments 1 and 2 that the copolymer of the claimed invention had a structure in which carbon atoms substituted with a cyclohexyl group where respectively separated by one methylene group.

(2) However, it could not be confirmed that the copolymer prepared with the catalyst used in Iseki et al. had a structure in which carbon atoms substituted with a cyclohexyl group were respectively separated by one methylene group.

(3) The crystallization temperature was significantly different between the copolymers of Experiments 2 and 3 though the vinylcyclohexane content was substantially the same each other.

(4) Accordingly, it is apparent that the structure and physical property of the claimed copolymer are significantly different from those of the copolymer disclosed in US Patent 6,288,193 (Iseki et al.).

Comments Concerning Cited Art References

The following comments are provided with regard to US 6,288,193 of Iseki et al. (which was cited in previous Office Actions dated December 30, 2002 and June 13, 2003), and EP 0 970 976 (which was cited in the Office Action dated October 5, 2004).

US 6, 288,193 (Iseki et al.)

The amended claim 1 is a copolymer of ethylene and a vinyl compound (I) selected from the group consisting of vinylcyclohexane and 3-methyl-1-butene having a structure specified in claim 1.

That is, the copolymer has a structure in which carbons substituted with a cyclohexyl group or isopropyl group are separated from each other by one methylene unit in its skeleton.

On the other hand, while Iseki et al. discloses an ethylene-vinylcyclohexane copolymer, the copolymer does not have the structure specified in instant claim 1.

The difference in the structure between the copolymers of the claimed invention and Iseki et al. is caused by a difference in the polymerization catalyst used for producing the copolymer.

The polymerization catalyst used in Iseki et al. is described at column 10, line 46 to column 27, line 7, particularly, with respect to the transition metal complex, between column 10, line 46 and column 24, line 50.

However, the copolymer in the claimed invention is produced by using a catalyst as described at page 12, lines 2-12 in the specification of the instant application.

The Applicants prove by submitting Mr. Oi's accompanying 37 CFR § 1.132 declaration that the copolymer of the claimed invention is different in structure from that disclosed in Iseki et al. That is, as apparent from the declaration, the claimed copolymer has a structure in which carbons substituted with a cyclohexyl group or isopropyl group are separated from each other by one methylene unit in its skeleton. On the other hand, in the copolymer disclosed in Iseki et al., a structure in which carbons substituted with a cyclohexyl group (when vinylcyclohexane is used as the vinyl compound (I)) or isopropyl group (when 3-methyl-1-butene is used as the vinyl compound (I)) are separated from each other by one methylene unit in its skeleton could not be observed. Further, from a comparison of Experiment 1 with Experiment 3 in Mr. Oi's declaration, it is clear that the crystallization temperature is significantly different between the copolymers thereof. Moreover, the crystallization temperature as a physical property is also different between the copolymers of the claimed invention and Iseki et al., as is also apparent from Mr. Oi's declaration.

Therefore, it is submitted that the claimed copolymer is not anticipated by Iseki et al. and further is not rendered obvious thereby.

EP 0 970 976 A1

The cited reference, EP 0 970 976 A1 (EP '976) discloses a copolymer of α -olefin with an alkenyl aromatic hydrocarbon. Further, EP '976 discloses that the α -olefin includes propylene, 1-butene...3-methyl-1-butene and vinylcyclohexane. However, EP '976 is silent regarding the copolymer of ethylene with 3-methyl-1-butene or vinylcyclohexane.

Furthermore, the polymerization catalyst used for producing the copolymer of α -olefin with an alkenyl aromatic hydrocarbon in EP '976, is similar to that used in Iseki et al., but it is clear that the polymerization catalyst used for obtaining the claimed copolymer is different from

that used in EP '976. Therefore, the structure of the copolymer is also different between the claimed invention and EP '976.

In addition to Iseki et al., EP '976 also fails to teach or suggest not only the use of the catalyst described in the specification of the above-captioned application but also the claimed copolymer significantly different in its structure from the copolymer disclosed in EP '976.

Iseki et al. and EP '976 do not provide any motivation for preparing the claimed copolymer.

Accordingly, based upon the above comments, it is clear that neither of the cited references of Iseki et al. or EP '976 are capable of either anticipating Applicants' claimed invention or rendering the same obvious. Any contentions of the USPTO to the contrary must be reconsidered based upon the remarks presented herein, as well as the data set forth in the accompanying declaration of Mr. Nobuo OI.

Additional Comments

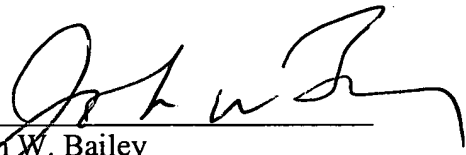
On even date herewith, an Information Disclosure Statement is being filed in the matter of the present application to bring two US Patents to the Examiner's attention. These US Patents are: US 5, 844,055 and US 4,226,965.

CONCLUSION

Should the Examiner have any questions regarding the present response or the accompanying declaration or remarks made herein, he is respectfully requested to contact Mr. John W. Bailey (Reg. No. 32,881) who may be located at the offices of the undersigned.

Dated: June 13, 2005

Respectfully submitted,

By 
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Attachment: 37 CFR § 1.132 Declaration of Mr. Nobuo OI